

APPENDIX C

Natural Resources on BLM Land

Upper Missouri River Breaks National Monument

Introduction

The Upper Missouri River Breaks National Monument was established on January 17, 2001, when President Clinton issued a Proclamation under the provisions of the Antiquities Act of 1906. The Monument contains a spectacular array of biological, geological, and historical objects of interest. When the Proclamation was issued a Listing of Significant Objects was available to the public along with other background material including a Summary of the Monument.

The Listing of Significant Objects provides a description of special management areas, areas of prehistoric interest, areas of historic interest, areas of geologic interest, and areas of biological interest. This list did not replace the objects identified in the Proclamation establishing the Monument and the list is not referenced in the Proclamation. The list does describe many of the natural resources on public land that the BLM manages for in the Missouri Breaks. This Appendix describes only those resources on BLM land.

Areas of Special Management

Upper Missouri National Wild and Scenic River (UMNWSR)

Congress designated 149 miles of the Upper Missouri as a component of the National Wild and Scenic River System in 1976 calling it an irreplaceable legacy of the historic American West. Congress further stated that the river, with its immediate environments, possesses outstanding scenic, recreational, geological, fish and wildlife, historic, cultural, and other similar values. BLM was directed to preserve the Upper Missouri River in a free-flowing condition and protect it for the benefit of present and future generations. Many of the items listed in this document are the same objects that were used to determine the significance and need for the Wild and Scenic designation.

Location: The UMNWSR boundary starts at Fort Benton, Montana and runs 149 miles downstream to the James Kipp Recreation Area.

Cow Creek Area of Critical Environmental Concern (ACEC)

The 14,270-acre Cow Creek ACEC contains segments of the Nez Perce National Historic Trail, the Cow Island

Trail and the Lewis and Clark National Historic Trail. It also includes portions of the Cow Creek Wilderness Study Area.

Location: Southeastern Blaine County.

James Kipp Recreation Area

The James Kipp Recreation Area is a campground at the terminus of the 149-mile UMNWSR. The 210-acre site is totally surrounded by lands managed by the U.S. Fish and Wildlife Service, Charles M. Russell National Wildlife Refuge. Although the existing recreation area is located on Corps of Engineers land, the BLM has a long-term lease to manage the recreation area which includes a boat ramp and fish cleaning station, campsites, potable water, sewage dump station and vault toilets.

Location: Terminus point of UMNWSR.

Cow Creek Wilderness Study Area

This WSA covers 34,050 acres on the north side of the Missouri River and 21,590 acres have been recommended as suitable for wilderness designation. The size of the area, opportunities for solitude and primitive recreation, and the attractiveness of the setting combine to provide excellent wilderness quality. A diversity of recreational opportunities makes this area excellent for primitive recreational use, and a four-mile-long sheer wall of sandstone is an outstanding scenic feature.

Location: Blaine and Phillips Counties.

Stafford Wilderness Study Area

This WSA covers 4,800 acres on the north side of the Missouri River. More than 90 percent of the WSA is within a rugged portion the UMNWSR corridor. None of this WSA was recommended for wilderness designation because its small size and configuration allows it to be affected by offsite sights and sounds, and because of a high potential for natural gas development. This WSA contains isolated areas that offer outstanding opportunities for solitude, but does not contain outstanding primitive recreation opportunities.

Location: Chouteau and Blaine Counties.

Ervin Ridge Wilderness Study Area

The WSA covers 10,200 acres on the north side of the Missouri River and 5,061 acres along the southern boundary of the WSA are within a wild segment of the UMNWSR corridor. None of this WSA was recommended for wilderness designation due to a variety of resource conflicts and manageability concerns including a high potential for natural gas development. The area is very scenic and rugged, combining steep slopes with narrow ridges.

Location: Blaine County.

Dog Creek South Wilderness Study Area

The WSA is on the south side of the Missouri River and contains 5,150 acres and 3,902 acres are within the UMNWSR corridor. None of this WSA was recommended as suitable for wilderness designation due to the high potential for natural gas development and the potential for wilderness management conflicts. The small size of this area, along with terrain that opens to major off-site influences just beyond its boundaries, limits the opportunities for outstanding solitude to isolated areas in the deeper drainages.

Location: Fergus County.

Woodhawk Wilderness Study Area

This 8,100-acre WSA is on the south side of the Missouri River. About 3,500 acres of the WSA are within the UMNWSR corridor. None of the WSA was recommended as suitable for wilderness designation due to a combination of the unit's small size, a cherry-stemmed road running through the WSA, and several resource conflicts. It has a high potential for natural gas reserves. The WSA has colorful broken topography, and several prehistoric occupation sites are in the area. During the steamboat era, woodhawkers (wood cutters) cut timber to fuel steamboats plying the Missouri River. The Nez Perce Indians probably traversed the area in their attempt to escape to Canada in 1877.

Location: Fergus County.

Antelope Creek Wilderness Study Area

The WSA covers about 12,350 acres on the north side of the Missouri River and 9,600 acres have been recommended for wilderness. This WSA offers outstanding opportunities for solitude and provides a diversity of primitive recreational opportunities such as hiking, photography, hunting, and rock climbing. The

area is rich in historical significance, including Kid Curry's Outlaw Hideaway.

Location: Phillips County.

Lewis and Clark National Historic Trail

The Lewis and Clark Trail was designated a segment of the National Historic Trail System in 1978. The expedition passed through the Missouri Breaks area in May 1805 and on the return trip in July 1806. Lewis writes about the "white cliffs" and the "breaks" in his journals as the expedition traveled and camped along the Missouri. It is one of the few landscapes along the entire Lewis and Clark National Historic Trail that has remained relatively unchanged since the Lewis and Clark Expedition passed through this area.

Location: 12 Lewis and Clark campsites along the UMNWSR.

Nez Perce (Nee-Me-Poo) National Historic Trail

The Nez Perce National Historic Trail, which crosses the Missouri River Breaks, was designated a component of the National Historic Trail System in 1986. The 1,170-mile route was used by the Nez Perce Indians in an attempt to escape to Canada in 1877. Their escape was marked by more than 20 battles and skirmishes. The Cow Island skirmish, which occurred in the Missouri River Breaks on September 23, 1877, was the last encounter prior to the Nez Perce surrender at the Battle of the Bear Paw just north of the Breaks.

Location: Fergus and Blaine Counties.

Upper Missouri National Wild and Scenic River Watchable Wildlife Area

The entire UMNWSR was designated a Watchable Wildlife Area in 1990 because of the unique and diverse wildlife populations that abound along the river. Visitors come from around the world to view the wildlife.

Location: UMNWSR.

Missouri Breaks Back Country Byway

The Missouri Breaks Back Country Byway was designated in 1993. The Byway has more than 75 miles of gravel and unimproved roads that traverse portions of the Missouri River Breaks and lead to scenic overlooks of the UMNWSR.

Location: UMNWSR.

Areas of Historic Interest

Homesteading

Most of the Missouri River bottom was homesteaded during the early part of the 20th century or left federal ownership through the Stockraising or Desert Land Acts. The Breaks contains the remains of several early agricultural developments on BLM land. The Ervin, Hagadone, Middleton and Nelson homesteads have standing structures that are eligible for the National Register and are within the UMNWSR. The Gilmore homestead is within the Missouri Breaks, but outside the UMNWSR boundary.

Location: Various within UMNWSR and Missouri Breaks.

Fur Trade and Forts

Immediately following the Lewis and Clark Expedition, fur traders, primarily based out of St. Louis, began working their way up the Missouri to secure furs, either through trapping or through trade with the Indians. In addition, two Canadian-based British companies had established fur trade in the northern Great Plains and northern Rocky Mountains. With the influx of settlers and fur trappers to the area, Indian tribes, primarily the Blackfeet, kept the area in peril thus delaying the establishment of trading posts. In 1831, Fort Piegan was established at the mouth of the Marias. Many of the forts were short-lived, fluctuating with the trade relationship with the Blackfeet. In 1847, Fort Clay was established and was soon renamed Fort Benton. This fort became the most important trading center in what was to become Montana and was the head of the navigation on the Missouri River.

Location: Various locations along river.

White Rocks Historic District

This is a collection of natural features and cultural sites encompassing the White Rocks region of the Missouri. A special feature included within the White Rocks Historic District is some historical graffiti. The U.S.S. Mandan was a government snag boat which worked on the Missouri from the 1880s to 1910. One of the crewmen aboard this ship painted "USS Mandan" in a grotto near Eagle Creek. The historic period graffiti is still visible.

Location: UMNWSR.

Dauphin Rapids Historic District

This area was known as a dangerous stretch of river for steamboats, and was often referred to in their historic accounts.

Location: River miles 100 – 104.

Cow Island Trail

This early trail was part of the transportation network which supplied the Montana gold fields in the 1860s and 1870s. Steamboats moved freight up the Missouri River to Fort Benton and bull trains distributed the goods. The Cow Island Trail was used to freight supplies from Cow Island to Fort Benton when the river was too low for boats to reach Fort Benton.

Location: Chouteau County.

Areas of Geologic Interest

Eagle Sandstone Formation

A light gray to buff colored coarse grained sandstone with ferruginous concretions. It was deposited as beach and barrier facies during regression of an inland sea that covered the central area of the North American Continent during the Cretaceous Period. The formation derives its name from, and is located on, Eagle Creek at its confluence with the Missouri River. It weathers to form statuesque features, arches and hoodoos. Some of the natural features carved from this formation are Eye of the Needle, Hole in the Wall, Steamboat Rock and Seven Sisters.

Location: White Rocks portion of the UMNWSR, from Virgelle to the mouth of Arrow Creek.

Judith River Formation

Gray to Yellowish, massive sandstone interbedded with silty mudstones and lignites containing a wide variety of fossil flora and fauna. It formed as a lagoonal deposit when there were many river deltas and tidal flats on the edge of the transgressing Bearpaw sea during late Cretaceous time. It is an abundant source of petrified wood and invertebrate fossils, and extensive vertebrate bone beds also exist. Some duck bill dinosaur finds from this formation are on display at the Museum of the Rockies in Bozeman, Montana.

Location: The formation is named for, and is located at, the mouth of the Judith River near PN Bridge.

Bearpaw Formation

Dark gray to black thinly bedded shale with calcareous concretions. It was deposited in the deepwater environment of the Cretaceous sea. It is a source of marine shellfish fossils known as ammonites and baculites. Marine reptiles called plesiosaurs and masosaurs have also been found.

Location: The exposed formation starts in the Cow Creek area and extends downstream to Fort Peck Dam.

Hell Creek/Lance Formation

Dark gray to red and green sandstones, siltstones, carbonaceous shales and lignites are present. They were deposited in a lowland area after the last regression of the Cretaceous age Bearpaw sea. These are the latest Cretaceous-aged rocks exposed in the sequence of fossilized beds and are the source of the T-Rex specimens on display at the Museum of the Rockies.

Location: Lower Missouri River Area including the Charles M. Russell Wildlife Refuge.

Alkalic Intrusions

These fine-grained igneous rocks, dominated by dark-colored minerals occur as dikes, sills and stocks injected into fractures in the Cretaceous Age sandstones and shales. They range in age from Tertiary to late Cretaceous. They are more resistant to weathering than the enclosing sedimentary rocks causing them to form promontory features in the surrounding terrain. Some of these that have been named along the river are Dark Butte, LaBarge Rock, Citadel Rock and Pilot Rock. Some of the natural features north of the river are Eagle Buttes, Birdtail Butte and Chimney Rock.

Location: From the Bears Paw Mountains on the north to the Highwood Mountains on the south. They occur throughout the Missouri Breaks but are more visible in the White Cliffs area due to the color contrast.

Saskatchewan Butte

An erosional remnant of a volcanic vent rising about 200 feet above the surrounding terrain located on federal land. The Butte is about 10 acres in size and has potential for gemstone occurrence. It is typical of other features described as the Missouri Breaks Diatremes in numerous professional papers and mineral reports prepared by the U.S. Geological Survey and Bureau of Mines.

Location: North side of the Missouri River near Bull Creek.

Areas of Biological Interest

Diversity of Vegetative Communities

The combination of Missouri Breaks and Missouri River vegetation communities results in an impressive variety. The Missouri Breaks is a unique landscape composed of mostly timbered coulees and drainages leading from the

higher plains down to the Missouri or its tributaries. These timbered draws are composed of ponderosa pine and/or Douglas fir with a smaller component of Rocky Mountain juniper. An understory of various native grasses and forbs exists. Ridge tops and benches in the area support the sagebrush/prairie grassland communities typical of the Northern Great Plains/Northern Rockies. River communities show a wide variety of vegetative types with some examples being cottonwood gallery forest types, green ash climax type, silver sagebrush and black greasewood types and many others.

Location: Throughout the Missouri River Breaks area.

Wildlife

The variety of vegetation along the river and its associated areas provides habitat for a diverse wildlife population. More than 60 mammals, 233 species of birds and 20 species of amphibians and reptiles inhabit these areas. The river itself is home to 48 species of fish ranging from the half-ounce minnow to the 140 pound paddlefish.

Mammals: The area between the river's edge and the mixed forested, sagebrush steppe and agricultural land along the canyon rims provides valuable habitat for several species of mammals. Probably the most significant of these mammals are the special status black tailed prairie dog and five big game animals: bighorn sheep, elk, mule deer, whitetail deer and pronghorn antelope. The canyon areas also provide habitat for predator species. Mountain lions appear to be doing well in the breaks portions of the corridor.

Birds: Of the 233 species of birds that inhabit the corridor, the bald eagle is on the T&E list and the peregrine falcon and mountain plover are considered special status species. The cliff faces provide perching and nesting habitat for many raptors and other birds. The more significant and abundant of the cliff nesters (golden eagle, prairie falcon, sparrow hawk, and Canada geese) are using some of the cliffs adjacent to water to nest in. There are four species of upland game birds present in the corridor: gray partridge, sharp-tailed grouse, sage grouse, and ringnecked pheasant. Two other species along the river are the white pelican and the great blue heron.

Fish: Forty-eight species of fish are found in this area of the Missouri River and its tributaries. Of these, the pallid sturgeon is on the T&E list and five are considered to be special status species: blue sucker, paddlefish, sauger, sicklefin chub, and sturgeon chub. Walleye, channel catfish, and shovelnose sturgeon are also present.

Location: River corridor and surrounding environments.

Threatened and Endangered Fish – Pallid Sturgeon

Pallid sturgeon were listed as federally endangered in 1990. This species has also been listed as a Montana Species of Special Concern (MSSC) since the list was first started in 1979. The first record of pallid sturgeon in the Missouri dates back to the late 1880s. It is believed that construction and operation of Canyon Ferry, Tiber, and Fort Peck dams/reservoirs have altered habitat and fragmented pallid sturgeon populations to the point that they are now threatened with extinction. Pallid sturgeon recovery is in its initial stages and consists of protection of the gene pool by stocking hatchery-reared fish and re-creating the important spring pulse of the Marias River.

Location: Various habitat areas along the Missouri River.

Special Status Mammal – Black tailed Prairie Dog

The black tailed prairie dog was eligible for listing but precluded by the USFWS in February 2000. Even though prairie dog towns are limited due to topography, the opportunity for black-footed ferret occupation and other species associated with prairie dog towns (burrowing owls, ferruginous hawks, and mountain plovers) exists. Prairie dog towns provide unique habitat that attracts a large number of wildlife species, particularly predators such as coyotes and badgers.

Location: Small towns scattered throughout the UMNWSR, primarily in the Bullwhacker and Cow Creek drainages.

Special Status Bird – Bald Eagle

Bald eagles have historically nested on the Missouri River and there are several known long-term active nests. There is suitable habitat to support additional bald eagle nests on the river. One limiting factor may be the distribution of stands of large cottonwoods along the river. The Missouri River is an important stop for spring and fall migrant eagles that nest further north.

Location: Various habitat areas along the Missouri River.

Special Status Bird – Peregrine Falcon

The Peregrine Falcon is one of the few species to be delisted from T&E status. The Missouri River corridor has excellent potential to support breeding pairs of peregrine falcons but none have been positively identified at this point. Several adult peregrines have been seen near the river in the last few years. Approximately 24 young peregrines have been released at a hack site on the Missouri River since 1993 and there are at least two other hack sites in the Fergus county area that have released similar numbers of birds.

Location: Cliff nesting sites along the river corridor provide potential habitat.

Special Status Bird – Mountain Plover

This species is proposed to be listed as threatened by the USFWS. Mountain plovers would most likely occur on shortgrass prairie habitat which is very limited in the UMNWSR, but they are also known to nest on or near prairie dog towns. They are attracted to the prairie dog town due to the lack of vegetative cover and abundant insects that consume prairie dog dung.

Location: No direct observations documented to date. Potential habitat on any of the prairie dog towns in the corridor, particularly on the larger towns in the Bullwhacker and Cow Creek drainages.

Special Status Fish – Sauger

The sauger is a game fish that was added to the MSSC list in June 2000 because of the widespread declines in sauger populations throughout Montana. This designation recognizes that sauger are more vulnerable to relatively minor disturbances to its habitat and deserves careful monitoring of its status. A severe decline in sauger numbers was first noticed in 1989. Populations remained very low through 1997, especially in the reach between Great Falls and at the confluence of the Judith River. The drought conditions in the late 1980s and early 1990s are thought to have been the reason for the decline.

Location: The sauger is commonly found throughout the Missouri River and its tributaries.

Special Status Fish – Paddlefish

Paddlefish is a very popular game found in the Breaks portion of the river. Because of its biological vulnerability, it was placed on the original MSSC list in 1979. Paddlefish once migrated up the Marias River, however, recent surveys have failed to confirm their presence there. It is believed that operations of Tiber Dam have contributed to their abandonment of this tributary stream. Evidence of spawning has been documented as far up river as Coal Banks, although the bulk of spawning probably occurs down river of Cow Creek. The paddlefish population in the Missouri appears to be stable.

Location: Paddlefish are most commonly found seasonally from Fort Peck Reservoir to Coal Banks during the spawning season (May-July).

Special Status Fish – Blue Sucker

Because of the Blue Sucker's biological vulnerability it was listed as a MSSC in 1994. The species prefers

sections of river with large substrates and steep gradients, such as the White Rocks section. The blue sucker conservation status here is steady, however, there does not appear to be normal numbers of juveniles. Comparisons of size (age) structures over the past 20 years indicate the population is stable with low recruitment.

Location: Blue suckers have been found throughout the Missouri and Marias Rivers.

Special Status Fish – Sicklefin Chub

Sicklefin chub were found in the Missouri in 1979. Because of significant declines throughout its range, it was petitioned for federal protection in 1990. Presently, USFWS is under litigation for not listing this species. Sicklefin has been classified as a MSSC since 1979. Populations appear to be stable.

Location: This species is found in moderate numbers from Cow Creek to Fort Peck Reservoir. They are only found in the Missouri River, preferring turbid water and deep water areas with sand bars.

Special Status Fish – Sturgeon Chub

Sturgeon chub were found in the Missouri in 1979. Because of significant declines throughout its range, it was petitioned for federal protection in 1990. Presently, USFWS is under litigation for not listing this species. Sturgeon Chub has been classified as a MSSC since 1979.

Location: Cow Creek to Fort Peck Reservoir. They are also found in some tributaries, preferring turbid water and deep water areas with sand bars.